

THE MEDICAL AND SURGICAL REPORTER.

No. 2101.

SATURDAY, JUNE 12, 1897.

VOL. LXXVI—No. 24.

ORIGINAL ARTICLES.

THE CLINICAL VALUE OF ALBUMINURIC RETINITIS.*

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The researches of Richard Bright, published in 1827, first established the constant relation which exists between albuminuria and organic disease of the kidneys. In his second paper, contained in Guy's Hospital Reports for 1836, he calls attention to the occasional occurrence of dimness of vision in albuminuric patients, but further and more exact knowledge of the ocular symptoms was delayed until after the invention of the ophthalmoscope by Von Helmholtz in 1851. Within a very short time following this, a large number of lesions within the eye were noted and more or less accurately described, among these being the changes in retina and optic nerve, which accompany the chronic varieties of nephritis.

Wishing to consider only the diagnostic and prognostic value of the *retinal* lesions, we may dismiss very briefly the extra-ocular evidences of nephritis, such as edema of the eye-lids, especially the lower, and impaired strength of the ocular muscles leading to diplopia and loss of the normal power of accommodation. For the same reason it will only be necessary to call attention to the rather infrequent instances of blindness due to ure-

mic poisoning, which are entirely apart from recognizable lesions in the eye tunics. This is characterized by the suddenness of onset, the presence of convulsion or other evidence of general uremic intoxication, and the rapid recovery of vision under successful treatment by purgation and diaphoresis. Such an attack of amaurosis may of course occur in patients having a previously developed albuminuric retinitis, but the character of the blindness should be easily recognized, especially as the active response of the pupils to light indicates blindness of cortical origin.

No detailed account of the ophthalmoscopic picture need be offered, but for the purposes of this paper we may describe the lesions as forming two groups. First, those of an inflammatory type with swelling of the papillæ and fresh hemorrhages into the retinal structure. This type is probably more frequently seen in the course of systematic examination of nephritic patients where the lesion is found during the earlier stages, and it presents a condition of neuro-retinitis resembling more or less that produced by other causes, notably some of the intra-cranial growths. The second group consists of cases of the degenerative type, with little or no change in the optic nerve and few hemorrhages,

* Read before the Germantown Medical Society,
May 24, 1897.

but with spots of degeneration in the retina, varying somewhat in form, color and arrangement, but in typical cases presenting groups of whitish glistening spots with soft edges, which are most frequent about the macula, and show a marked tendency to form rays or spokes having the yellow spot as a common centre. The circle of rays is, however, rarely complete, and the appearance has very aptly been described as "fanlike." This is the characteristic lesion, and the one most frequent among patients found in the eye clinics, and by which the remote disease can be diagnosed.

Retinal changes may occur in any form of kidney disease, including that of pregnancy and following scarlet fever, but is most frequent in the chronic variety which results in the contracted or cirrhotic organ. It is distinctly less frequent with the large white and amyloid kidneys. The eye lesion is almost always bi-lateral, but one eye alone may be involved, and there have been reported a very few patients presenting unilateral retinitis during life, who have, at the autopsy, been shown to possess but one kidney, that on the affected side.

The ocular appearances are probably due to changes in the vessel walls caused by alterations in the composition of the blood which lead to inflammation and degeneration, and which are most pronounced in effect where tissues are supplied by end-arteries, as in the brain cortex and retina. Retinitis may appear at any age, but is much more frequent in late life. The amount of visual disturbance is not constant and does not correspond to the severity of the retinal disease, or the amount of albumin in the urine. Sight may remain fairly good throughout, or gradually change for the worse as the case progresses.

Where life is prolonged sufficiently, there may be blindness from retinal detachment, secondary glaucoma, or atrophy. Generally the prognosis for vision may be said to depend upon the success of treatment directed to the kidneys, and to be overshadowed by the grave danger to life.

Albuminuric retinitis varies much as to the period in the course of the nephritis at which it appears, although distinctly more frequent in the later months. This ren-

ders necessary repeated observations in order to definitely exclude the minor and more transient changes. A difficulty in the way of such thorough examination is the fact that these patients are not usually disabled, and cannot be controlled for any length of time. An idea of the range within which competent observers estimate the frequency of retinal complication, may be gained from the following: Gowers & Eales, 28 per cent.; Swanzey, 6 to 7 per cent.; Juler, 8 to 10 per cent.; Knies, 7 to 30 per cent.; Norris, 7.64 to 30 per cent.; Frerichs, 13 per cent.; Berry, 10 to 20 per cent. From these figures an average of 15 per cent. may be deduced, which may be accepted as fairly accurate.

In certain instances it will be found extremely difficult to decide from the intra-ocular appearance, between nephritis and some form of brain tumor. Dr. Chas. W. Burr has recently given the matter careful attention in a paper which he read before the Philadelphia College of Physicians. Such a doubt can usually be dispelled by repeated chemical analysis of the urine, and search for those motor and sensory changes which are peculiar to intra-cranial disease. It must not be forgotten that it is by no means uncommon in cases of brain tumor to have an albuminuria without demonstrable lesion of the kidneys. Purely functional albuminuria has so rarely been known to cause alterations within the eye, that it may be excluded.

Ophthalmoscopic examination is of greatest diagnostic value in patients who are unconscious of any definite departure from perfect health, even while grave changes have taken place in the kidneys and the disease has reached a stage of extreme danger. Frequently no symptom has appeared except the impaired vision for which they finally consult an oculist, who is thus enabled to make the diagnosis. As some indication of the frequency with which this happens, I may mention that in the ten years at Wills' Hospital, ending with 1894, there are recorded one hundred and fifty cases of albuminuric retinitis. I believe that in very few of these had there been a previous suspicion of Bright's disease. At a somewhat later stage in the course of chronic nephritis, when its presence is suspected from the

general symptoms and a very low specific gravity of the urine, but where albumin and tube casts are absent, the condition of the eye-grounds becomes a matter of greatest interest and importance. It is of course admitted that the absence of retinal changes cannot be considered more than negative evidence, and does not exclude the possibility of nephritis.

Perhaps the presence of typical retinitis during the course of a case of Bright's disease derives its greatest value from the definite bearing it has upon the prognosis for life. There exists considerable uniformity of opinion upon this point, and excluding a very few exceptions, we may state with confidence that death is likely to occur within two years from the finding of characteristic changes in the retinæ. In a paper read before the Ophthalmological Section of the American Medical Association at Baltimore, in 1895, Belt collects the following statistics: of 155 cases in private practice 62 per cent. died in one year, and 85 per cent. within the two years. Of 77 hospital cases 85 per cent. died in the first year, and 93 per cent. before the expiration of the second year. Adding 187 cases of mixed character he gets a group of 419 cases, of which 72 per cent. died in one year, and 90 per cent. within two years. He also quotes letters from several prominent American observers, only one of whom speaks of life beyond the specified two years. My own experience does not permit me to entertain a more favorable opinion of the chances for life in the presence of this symptom. Among the cases in which I have been enabled to make note of the date of death, it has always occurred within eighteen months of the finding of the retinitis. Often there was no other evidence from which such an early fatal termination of the disease could be predicted. Retinitis occurring with the albuminuria of pregnancy, and that following scarlet fever, adds less to the gravity of the prognosis for vision or mortality, and such cases have not been included in the above figures. Where typical retinitis occurs as a complication in advanced pregnancy, the question of inducing premature labor will demand very careful consideration. The difference in favor of cases in private

practice, which have the advantage of careful hygiene and medication, is disappointing; only 8 per cent. more lived beyond the two-year limit.

The treatment of albuminuric retinitis is that of the important disease, and no particular medication need be directed to the eyes, but they should be protected from strong lights. Complete functional rest is very important, and can often be best secured by the use of a mild mydriatic.

AJELLO and Parascandolo conducted numerous investigations concerning the death after burns, and conclude that the deaths are caused by toxic ptomaines. Death is not due to the toxin of the bacterium *proteus*, nor to any anatomical changes which the blood or burnt parts may suffer. The ptomaines of burnt organs are the same when the organ is first removed from the body and then burnt. Healthy animals inoculated with this die with the same symptoms as burnt animals. Death after burning is therefore due to the absorption of ptomaines produced by chemical changes in the tissues due to burns. The immediate removal of the burnt part prevents this absorption, and consequently all specific symptoms of the burn and death. The same objects may be attained by venesection and the immediate transfusion of healthy blood or artificial serum. (Centralblatt für innere Medizin.)—*The Railway Surgeon.*

A SENSATIONAL story has been started by a New York daily to the effect that Henry M. Stanley is gradually turning black—becoming a negro in fact! That his skin is already mulatto-colored and taking a deeper hue daily. It is added that "this remarkable occurrence is attributable to the transfusing of African (negro) blood into his veins on several occasions, while in the wilds, for the purpose of immunizing him against the dense miasm so prevalent in the low lands of the Dark Continent."—*Medical Times.*

Happiness must be cultivated. It is like character. It is not a thing to be safely let alone for a moment, as it will run to weeds.—*Phelps.*

GENERAL ANASARCA.*

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This man is suffering, as most of you could tell at a glance, from dropsy. His legs are edematous, pitting deeply upon pressure; his face and hands are puffy, there is some fluid in the abdominal cavity and there is edema of the integument more or less marked all over the body. We naturally think of the various underlying causes of dropsy, and perhaps, first of disease of the kidney. An examination of the urine reveals the presence of albumin, not in large quantity, without casts. In an old man with contracted kidneys, even a slight amount of albuminuria without casts would be sufficient to account for the dropsy. But our patient is a comparatively young man, and the urine does not correspond with a diagnosis of contracted kidney, for it is small in quantity.

After renal disease, the most common cause of dropsy is an obstruction to the circulation either in the heart, lungs or anywhere else, so that an overdistension of veins results, and, consequently, a pouring out of serum into the loose alveolar tissue. Obstruction to the circulation is usually attended with lividity of the lips and mottling of the surface in other parts of the body. These symptoms you will notice here. The lips, cheeks, and ears show an almost purple hue, which is neither the ruddy glow of health nor the pallor of long illness nor of dropsy due to the kidney alone. The man does not present the usual symptoms of obstruction to the circulation in the lungs.

Some of you who are neophytes may ask how an obstruction to the flow of blood through the lungs can interfere with the general circulation. You must remember that the pulmonary blood-vessels are simply part of the course through which all the blood must circulate, and that an obstruction in them must hinder the flow of blood in the general systemic circulation. An examination of the lungs reveals a dulness on percussion at the bases, coarse,

moist rales and cooing sounds which are characteristic of edema or dropsy of the lungs. But edema of the lungs depends upon the same cause as any other dropsy, and, there being no evidence of other lung disease, we can hardly consider the pulmonary disease as both cause and effect of the dropsy. Without examining the heart, therefore, it becomes probable that it is responsible for the general edema.

As the man lies in bed, his pulse varies from 90 to 110. It is very weak; he has no temperature to speak of. If he sits up his pulse ought to be weaker after the temporary effort, because a feeble heart appreciates the difference between pumping blood vertically and horizontally. On raising the patient up in bed it is almost impossible to distinguish the pulse at the wrist, it is more feeble, more frequent, of greater tension. The patient complains, also, of being dizzy; this symptom undoubtedly signifying a deficient supply of blood to the brain.

The cardiac impulse is diffused, being most marked two and a half inches below the nipple, and half an inch outside the nipple line; but it is seen over a space two or three inches in diameter. The impulse is felt lower than it is seen. The apex of the heart is displaced about an inch downward, and an inch to the left. The bruits which are now most conspicuous are two: first, one heard in diastole over the sternum, even at its lower extremity, and secondly, a murmur heard at the articulation of the fourth rib, on the left side, in systole. The former is the sound produced by an aortic regurgitation, the blood flowing back into the left ventricle during diastole, and not allowing the heart to become empty.

The heart is thus kept over-full, the muscle hypertrophies to withstand the strain, but very soon dilatation follows, and it is this which accounts for the displacement of the apex.

The latter sound, which is harsh, is heard in the area of tricuspid bruits. It

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is due to the difficulty which the blood has in getting along.

The congestion of the lungs causes back-ing-up of blood from the lungs into the right ventricle, and dilatation of this ventricle occurs to such a degree that the folds of the tricuspid valve are separated, and a regurgitant murmur follows the leaking through of part of the blood. The tricuspid is not diseased; the leakage is a fortunate thing, just as is leakage of steam through a safety valve. Were it not for this safety-valve action between the right auricle and ventricle, the tension on the latter would be so great as to be a source of danger. From the hindrance to the circulation at the aortic outlet result indirectly the venous engorgement of the lungs; the lividity of the face and of the body, as a whole; the congestion of the liver, spleen, stomach, intestine and kidney; the oozing out of serum, which explains the various dropsies and the albuminuria.

A few minutes ago I spoke of the patient's being dizzy from lack of blood in the brain. Why, some of you will ask, does not the brain partake of the general congestion? It does, except so far as gravity aids the outflow of venous blood from the head. What I referred to was the lack of arterial, oxygenized blood; of this there was an ischemia, while, at the same time, there was a hyperemia of venous blood.

The circulatory change in the kidney has not been present long enough to produce organic lesion. If it had been, we would find albumin in large amount, along with casts. The slight albuminuria in this case is due to congestion of the kidney. The general dropsy is due to the cardiac disease. The question naturally arises, How long has this been present? The legs began to swell seven months ago, and, long before that, the patient was short of breath on exertion and he had occasional dizziness. How long before the advent of these symptoms the heart disease began, we do not know. There is no history of rheumatism, the patient says that he has never been sick until the present trouble confined him to bed, so that the ultimate cause of the aortic regurgitant lesion, we can not assign.

This is a very uncomfortable heart lesion to deal with. While the patient will improve from the rest in bed and the stimulation of his heart, while the dropsy will materially diminish and the congestion will subside, the underlying condition will remain unchanged. The man may so far recover as to feel like going to work again, but, so soon as he does so, the extra strain on the circulation will bring back the same train of symptoms. He should lead an easy life, one requiring little exertion either of body or mind. But such sinecures are not numerous and a laboring man has practically no chance of securing one.

The treatment has been indirectly indicated, in the discussion of the pathology of his condition. The heart must be kept strong with tonics, and, even more important, its labor must be lightened by rest in bed and massage and hot air baths to stimulate the capillary circulation. The baths will also relieve the kidneys and it may be necessary, also, to make the bowels more active. Digitalis and its congeners must be used with caution, for, by lengthening diastole, they are apt to add to the dilatation of the heart. However, they must be used to some extent. Instead of digitalis, caffein may be used and it will stimulate the urinary secretion more than the former. Belladonna or nitroglycerin or both may be used in conjunction with digitalis. Nitroglycerin has the effect of opening the arterioles and thus relieving the strain on the heart muscle. Gastric catarrh, in such a condition, is inevitable and the secretion of normal gastric juice is impossible. Hence the greatest attention must be paid to diet, since the power of the heart depends largely on the general nutrition.

The congestion of the lungs must lead to some degree of bronchial catarrh and will even predispose to broncho-pneumonia and thus expectorants may be needed. Any medication directed towards drying up the secretion or by repressing the cough to retain it in the lungs must be avoided. As the man's strength fails and the venous stasis becomes more marked, pulmonary edema will increase and will form part of the general picture of the decline of vitality.

CAN GASTRIC CARCINOMA BE DIAGNOSED SUFFICIENTLY
EARLY TO INSURE A CURE AFTER OPERATION?

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This important question was always answered in the negative prior to the introduction of the nerve-tests, chemic and microscopic, of the gastric contents as obtained by the stomach tube, etc. Given the ordinary symptoms of pyloric obstruction in a patient, the presence of a neoplasm might have been surmised, but not absolutely known, until it had grown to a distinctly palpable size, and then the golden opportunity for complete removal was often past.

It required many years of patient effort and reiteration by the advocates of direct trial of the withdrawn material from the diseased organ before the profession in general gave recognition, questioningly even at first, to the method, and opposition still exists to acceptance of the theory that we may distinguish stomach cancer largely by the absence of hydrochloric acid. The leaders of opinion in the medical centers are now pretty unanimous, however, that such a diagnosis is warranted when to absence of hydrochloric acid are added evidences of fermentation and loss of body weight with, possibly, regurgitation of food, cachexia, hemorrhage and localized pain.

The subject, under the old methods of exploration, offered so little encouragement to the physician, that I feel warranted in translating and quoting the details of the following case from the *Deutsche Medizinische Zeitung* of January 11, as directly in evidence:

Prof. J. Boas presented at the January 4 meeting of the Berlin "Verein für innere Medizin," a stone mason, aged fifty-six years, first seen by him in June, 1896, for symptoms of gastric disturbance. There existed after meals a sense of weight and fulness in the stomach, with eructations and occasional vomiting. No cachexia was noticed, but there had been a progressive loss of weight of ten kilograms.

Physical examination was found of but little avail in the diagnosis, and it was particularly noted that a tumor could not be felt.

Testing of the gastric contents, however, insured a more definite result and proved that the stomach was never entirely emptied, quantities of food detritus with a lactic acid reaction being found even in the morning. Rod bacilli (*bacillus vibrio*) were all present. The incidental history was of a fall from a height of two metres, several years previously, striking upon the lumbar region, but no untoward symptoms were noticed at the time.

The history, the present symptoms and the results of the examination seemed to point with considerable positiveness to the diagnosis of a stenosing gastric carcinoma. The operation performed by Prof. Hahn confirmed the diagnosis, that of tumor of the pylorus and, as this was circumscribed and without metastases, complete extirpation was done.

The course of the convalescence was a perfectly smooth one, and the patient's digestion is now perfect; the gain in weight is 15.5 kilos, and he is able to follow his usual calling. The tumor was of the size of half an apple and proved to be an adeno-carcinoma.

This case shows, even though a tumor may not be felt on palpation, that it is yet possible by the newer tests to furnish the indications for early operation which would have been out of question prior to the recent improvements in the chemic methods.

Boas further holds that, were the surgeon to insist in the finding of a tumor as necessary for a diagnosis, the disease would reach a stage too late for total extirpation. He also mentioned two similar cases in his own experience, and three or four in that of other operators in which the above plan permitted of early and complete removal, and with definite and permanent cure.

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COMMUNICATIONS.*

MEDICINE.†

Medicine is not, never was, and never will be an exact science; but it always has been progressive, and never more so than at the present time. Fifty years ago, perhaps, medicine merited the reproach of being the least exact of all sciences, but its progress within the last fifteen years has been so prodigious that it is now in advance of the mall. The Abbe illuminating apparatus made the study of bacteria possible; and this, with the wonderful apochromatic lenses, as it now appears to us, have rendered nearly perfect our technical means of histologic and bacteriologic research. We no longer differentiate and separate structures by the coarse methods of actual dissection alone, but with the delicate and precise instruments used in cutting thin sections, and by staining we have come to an exact knowledge of physiologic and pathologic histology which fifty years ago seemed unattainable. To say that pathology has been revolutionized within the last ten or fifteen years is not enough. A new pathology has been created, and with it have come an intelligent hygiene, prevention and therapeutics based upon exact scientific knowledge.

Dr. Flint hoped for a more complete unity of the medical profession, and he deemed nothing more important than uniformity in medical legislation, and, so far as possible, in educational requirements preliminary to the study of medicine, and for license to practice after graduation. Uniformity of legal qualifications to practice medicine in the different States can best be secured by making every State Society actually, as well as nominally, a branch of the American Medical Association, with permanent committees from each State organization, together to constitute a central legislative body. The object of

this central body should be to secure uniform medical laws in all the States, making any State license valid for all, and a matriculation certificate for one State good for matriculation in all schools represented in the Association of American Medical Colleges. A certain kind of medical instruction must be concentrated in large cities, where clinical material is abundant; and absolute uniformity of curriculum cannot exist in all colleges, but certainly the legal requirements for practice, as determined by examination by State Boards, can be made practically identical for all the States. While this would not prevent ambitious young men from trying their fortunes in large cities, it would distribute well-qualified physicians more equally in the country at large, and tend to raise the standard of qualifications and usefulness in the average country doctor.

The remainder of the address had to do with a special research on stercorin and cholesterolemia in relation to the pathology of the liver. Undoubtedly there are general disturbances of the liver which occur without jaundice, and this fact has long been recognized. In a case of cirrhosis with considerable constitutional disturbance, but no jaundice, the blood was found to contain an excess of cholesterin .922 of a part per thousand. In what is termed acholia there may be grave nervous symptoms without jaundice, and the pathology of such cases is unknown.

It must be remembered that the liver is by far the largest gland in the body; that it secretes a fluid which is known to have a double function, one connected with digestion and the other with the elimination of cholesterin; that the blood from the digestive tract all passes through this organ, where it undergoes certain changes; that it probably stores up the products of amylolytic digestion in the form of glycogen; that it arrests certain poisons, and that it is the chief organ concerned in the production of urea, which is discharged

* Reported for THE MEDICAL AND SURGICAL REPORTER.

† Address before the American Medical Association, June 2, by AUSTIN FLINT, M.D., of New York.

by the kidneys. It may have other uses in what is now called internal secretion, in addition to that of destruction of blood corpuscles and the change of hemoglobin into bilirubin. With all these known varied uses of the liver, however, the pathology of hepatic diseases is most obscure. We do not know, even, the cause and mechanism of the formation of gall-stones, which are often composed almost entirely of cholesterol.

The term acholia, as used in pathology, now means very little, and conveys no distinct idea of the causes of the nervous symptoms which attend this condition. The term cholemia is generally regarded as almost synonymous with jaundice. If cholesteremia be recognized as a distinct pathologic condition, with symptoms due either to the accumulation of cholesterol

in the blood, acting as a toxic substance, or to imperfect separation of cholesterol from the nervous tissue, a positive advance will be made in our knowledge of the pathology of many obscure liver disorders.

If examinations of the blood were to be made in cases of obscure nervous disturbance in epilepsy and other disorders of this nature, it is possible that cholesterol may be found to play an important part in their pathology. The fact that bromin readily combines with cholesterol, taken in connection with the wide use of the bromides in diseases of the nervous system, is very suggestive. May not the bromides promote the elimination of cholesterol, a substance which is so insoluble and which forms few combinations? These points may seem well worthy of the consideration of pathologists and therapeutists.

THE AMERICAN MEDICAL ASSOCIATION.*

The American Medical Association was the first truly national organization of the medical profession, deliberately planned to represent the profession of the entire country and to promote all its general interests, together with the sanitary interests of the whole people, of which we have any knowledge.

At the time of the organization of this Association—1846–1847—the number of medical colleges in the United States was more than thirty, with an annual attendance of more than 3500 students, of whom not less than 1000 annually received the degree of Doctor of Medicine, thereby showing that the education of medical students had been transferred with equal rapidity from the preceptor's office to the medical schools.

Unfortunately, this rapid evolution of collegiate medical education took place under no general supervision nor in accordance with any uniform system of laws. On the contrary, the Legislatures of the several States freely granted charters for medical schools with authority to grant diplomas, which were accepted as a sufficient license to practice medicine, but

left them all without pecuniary endowment, and therefore directly dependent upon the fees received from students for their support. This necessarily led to a most active rivalry for numbers of students. Had this rivalry been limited to efforts to see which school or college Faculty would give the most complete and reliable instruction in the various branches of medicine only good could have resulted therefrom. The making of the diploma a sufficient authority to enter upon the practice of medicine, however, changed the ruling question in the minds of three-fourths of the students from, "In which medical school can I obtain the most thorough medical education?" to "In which school can I obtain the degree of Doctor of Medicine for the least expenditure of time and money?"

And so potential was the latter question in the several medical schools that, although the three medical schools originally organized in Philadelphia, New York and Boston, had been founded substantially on the same basis or curriculum as the University of Edinburg, requiring a good academic education as a preliminary for entering the medical course, then from three to five years of medical study, with

* Address by Dr. N. S. DAVIS at the Jubilee Meeting, June 3, 1897.

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annual college terms of not less than six months, long before the number of our medical schools had reached thirty, all preliminary requirements had been abandoned, the term of medical study limited to a nominal three years, and the medical college instruction to two annual repetition courses of from twelve to sixteen weeks each.

Under this inadequate and unsystematic medical college education, it really cost less in both time and money to obtain the degree of Doctor of Medicine than it had previously cost to serve an apprenticeship in the office of a respectable practitioner and obtain a license from the censors of a local medical society. Of course, it elicited severe criticism by some of the most eminent teachers connected with the medical schools, by contributors for the medical press, and in discussions in many of the medical societies.

And the one great fact that no adequate improvement could be made without either actual concert of action between the medical schools of all the States, or the establishing of independent Boards for examining and licensing candidates for the practice of medicine in each State, became apparent to every enlightened member of the profession. The earliest attempt to procure concerted action was among the medical schools in the New England States. In 1835 the Faculty of the Medical College of Georgia urged, through the medical press and by correspondence with other college faculties, the holding of a National Convention of delegates, and in February, 1840, the Medical Society of the State of New York adopted a preamble and resolution offered by Dr. John McCall, of Utica, recommending the holding of a Convention of delegates from all the medical societies and colleges in this country, in Philadelphia in May of the same year.

The sole object of all these propositions was to procure concerted action in elevating the standard of medical education in the United States, and though they failed to get even the semblance of a Convention, the discussions to which they gave rise did aid in demonstrating more fully the necessity of accomplishing the grand object just stated. Resolutions, offered by Dr. Davis,

were adopted by the State Medical Society, New York, in 1845, setting forth that a National Convention would be conducive to the elevation of the standard of medical education in the United States; and, as there was no mode of accomplishing so desirable an object without concert of action on the part of the medical societies, colleges and institutions of all the States, the New York State Medical Society earnestly recommended a National Convention of delegates from the medical societies and colleges in the whole Union to convene in the city of New York on the first Tuesday in May, 1846, to adopt some concerted action.

May 5, 1846, about one hundred delegates, representing medical societies and institutions of sixteen of the twenty-six States then in the Union, assembled in the hall of the medical department of the New York University and effected an organization.

At that meeting it was decided expedient to form a National Medical Association, with a view to securing a uniform and elevated standard of the requirements of the degree of Doctor of Medicine; to raise the requirements as to preliminary education, and to secure a uniform code of medical ethics. It was decided to hold the next Convention in Philadelphia, May 5, 1847. On the latter date about 250 delegates assembled in this city in the old hall of the Academy of Natural Sciences, the medical institutions of twenty-two States being represented.

A complete constitution, by-laws and code of ethics were adopted, and the Convention resolved itself into the American Medical Association, electing President, Dr. Nathaniel Chapman, of Philadelphia; Vice-Presidents, Dr. Jonathan Knight, of New Haven; Dr. Alexander N. Stevens, of New York; Dr. James Moultrie, of Charleston, and Dr. A. H. Buchanan, of Nashville; Secretaries, Dr. Alfred Stillé, of Philadelphia, and Dr. J. R. W. Dunbar, of Baltimore; Treasurer, Dr. Isaac Hays, of Philadelphia.

I am most happy to add that every leading object sought to be accomplished by its founders has been substantially attained. That is: Universal, free and friendly social and professional intercourse

has been established ; the advancement of medical science and literature in all their relations has been promoted, and the long agitated subject of medical education has reached the solid basis of a fair academic education as preparatory, four years of medical study, attendance on four annual courses of graded medical college instruction of from six to nine months each, and

licenses to practice to be granted only by State Boards of Medical Examiners. The grand citadel of our noble profession has thus been constructed on its legitimate foundations, and it only remains for those who come after us to perfect its several parts and make them more and more efficient in preventing human suffering and prolonging human life.

MUNICIPAL CONTROL OF DIPHTHERIA.*

The prevention of disease is the province of the Municipal Health Department ; the treatment of disease is in the hands of the medical profession, whose members stand within the circles of domestic confidence, which is essential in the treatment of disease. No scientific mind can study the effects of ptomain poisoning on the growing child and fail to appreciate the importance of preventing the contagious diseases of childhood. No child can reach the same physical and mental development after severe ptomain poisoning.

Diphtheria is both a preventable and curable disease, and a death from diphtheria is now considered by the best physicians in a similar light as one from puerperal fever—namely, the result of ignorance in the physician or attendants, or both. Could every child have the fullest scientific protection there need not be a death from Klebs-Loeffler diphtheria.

Duty to the race demands that every precaution should be taken to prevent contagious diseases among children. So long as the child remains at home the responsibility of giving this protection rests upon the parent. So soon as the child is sent to the school, the store or the factory, it becomes a ward of the State, and should have its protection.

The State has every right to throw rigid restriction around child labor for her own protection. Unless done in harmony with the laws of mental development, it works a two-fold injury—first, to the child itself, and second, to the coming generation. Medical inspection should be done with the organized system that characterizes

scientific work. The services of the best specialists should be obtained to direct the efforts of the medical inspector. The most valuable results await the adoption of scientific methods in the formulation of laws governing child life.

Ten years of experience in the study of diphtheria has taught me the value of antitoxin as a curative agent, and the importance of an early bacteriologic diagnosis as the most important measure for the prevention of the disease. If within a few hours of the first call of a physician to see an inflamed throat the infectious nature of the disease is known and the child isolated, the spread of the infection may be stopped.

The health department renders the physician valuable assistance when it places within his reach a reliable grade of antitoxin. Not having the government guarantee possessed by European physicians, the next best thing is to possess the guarantee of the municipal health department. The health authorities can acquaint themselves with reliable producers of antitoxin, and in the laboratory they have the means of testing its quality. Every city has its own problems to solve.

In evolving a plan for the control of diphtheria all conditions of municipal life must be considered. Municipal control of diphtheria, then, means : first, the enforcement of those hygienic laws which will increase physiologic resistance, and thus remove predisposition to the disease ; second, it should protect children from contagion by competent medical inspection in schools and places of work ; third, it should furnish physicians convenient means for early bacteriologic diagnosis ; fourth, it should obtain the best quality possible of antitoxin for the physicians' use.

* W. K. JAQUES, M.D., Expert of the Chicago Health Department, before the American Medical Association, June 3, 1897.

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AMERICAN MEDICINE.*

It required a long time after the permanency of our Government was assured for our professional ancestors to appreciate the opportunity to establish American medicine upon a free American soil, and to take the necessary steps to secure adequate facilities for our young men to obtain a satisfactory medical education in this country, and to create a medical literature of their own. Foreign text-books were used, and European universities continued to be the Mecca for American students who sought a higher medical education. The country was new, its resources limited, its inhabitants represented different customs and nationalities, and the number of qualified practitioners was limited. It is, therefore, not surprising that the organizations of the profession, the establishment of institutions of learning and the foundation of an American medical literature met with many difficulties which it required years to correct and remove.

Philadelphia has a special charm for every practitioner of medicine who has the interest and welfare of his profession at heart, as it has been, and remains, the centre of medical education and medical literature in this country, besides being the birthplace of the American Medical Association. The members of the medical profession of this city, with Benjamin Rush at the head as a noble and inspiring example, have always been loyal to the cause of a united profession, advanced medical education and the foundation of an independent American medical literature of the highest merit.

We are assembled to commemorate the work of a group of earnest men, patriotic American citizens, who took such an active part in uniting the medical profession of this country by bringing into existence and active operation the American Medical Association. Most of those who were helpful in laying the corner-stone of this great national institution have gone to

their reward; few are left to tell the tale of the early struggles, frequent disappointments and final triumph of those who have been permitted to live long enough to witness the celebration of the semi-centennial; four names are familiar to you all, Nathan S. Davis, of Chicago; Alfred Stillé, of Philadelphia; J. B. Johnson, of St. Louis, and D. F. Atwater, of Massachusetts. Dr. Stillé was its efficient and faithful Secretary for many years.

These names have illuminated the firmament of American medicine for half a century, and they will continue to shine brighter and brighter as the association increases in influence and membership. While our hearts are full of gratitude towards the few surviving founders of the association, we must not forget the labors of the many who have joined the silent majority. Hundreds of former members of the association have performed important duties, written scientific papers, and by their work and example have distinguished themselves sufficiently to have their names written upon a tablet, to be placed in the Memorial Hall of the future permanent home of the association.

The founders of the American Medical Association were deeply impressed with the dignity and responsibility of our profession. They had for their object to secure by united action a higher standard of medical education, a more general diffusion of medical knowledge, and the creation of a respectable American medical literature.

Animated by noble sentiments the founders of the association began and finished their task with a spirit of unselfishness and a keen sense of responsibility and devotion of their important mission. The idea of organizing a National Medical Convention originated in the New York State Medical Society, and was discussed for the first time at the meeting in 1844. The main idea of this project was the elevation of the standard of medical education, and consequently the betterment and advancement of the whole profession. The needs of such a step were very apparent at that time.

* Presidential address, American Medical Association, June 1, 1897, by DR. NICHOLAS SENN, of Chicago.

Radical changes in our system of medical education could only be attained by persistent efforts in the course of time, but during the fifty years of the existence of the association they have been wrought and perfected to an extent far beyond the most sanguine expectation of its most enthusiastic founders. The association during this time has accomplished much more than what it was originally designed for. Through its influence nearly all of the medical colleges have adopted a systematic graded course of instruction combined with ample hospital, clinical and laboratory facilities. Besides all this it has brought the members of our profession in the various sections of our vast country in close touch and intimate social relationship.

The association is now in a healthy condition, with a membership of nearly 9000, and there is no reason why, in the course of ten years, it should not be increased to 50,000.

One of the principal objects in view of the founders of the American Medical Association was to effect a much needed reform in medical education, looking towards a higher standard of preliminary preparation, lengthening of the lecture course and a systematic graded course of instruction. These objects have been nearly attained, and largely through the influence of the association. This mission of the association is about fulfilled. We have medical schools that are on a par with those of the older nations. There is no further excuse for our medical students to seek foreign universities to obtain a thorough medical education. Some of the very best practitioners of the United States are men who graduated in our own schools, and who have never left their native soil. It requires no stretch of imagination to predict with certainty that our country will become the centre of medical education within twenty-five years, and our medical institutions will be sought by foreign nations, as they will, in the course of that time, furnish facilities for teaching far in advance of those of any other country.

The next function of the association, so far as medical education is concerned, lies in another direction, post-graduate educa-

tion; and the greatest stimulus to original research would be the awarding of an association gold medal for the best essay on any subject pertaining to the healing art.

It is time that the profession of this city, the home of the distinguished Benjamin Rush, should do something substantial to commemorate his memory. They can do nothing better than to establish at once, before this meeting adjourns, a Rush memorial prize, to be awarded for the best treatise on any subject relating to the science or practice of medicine. This city has an enviable reputation for its distinguished, enthusiastic and wealthy physicians, and I am confident they need only to be reminded of this late obligation to to their most eminent colleague of the past to step forward and subscribe the necessary fund of \$5000 or \$6000. I am sure if Benjamin Rush had a voice in this matter he would prefer such a monument to one of marble or bronze. I trust that in the near future every section will establish an annual prize. If this is done we may expect a rich harvest of the most valuable contributions to indigenous medical literature.

One of the present needs of the association is a permanent home, with an editorial staff and press-room for its official organ, a hall for the meetings, a library room and a memorial hall for paintings, busts of distinguished members of the association, and a room for a collection of indigenous medical plants and surgical instruments, the invention of American physicians and surgeons.

We are now laying the corner-stone, and are slowly but surely building the foundation for rational medicine and surgery. The work of the next fifty years will no doubt contribute much towards making what has been sought for ages in vain, the rendering of medicine and surgery exact sciences. The American profession will contribute liberally towards accomplishing this object.

AN exchange notes that five to ten drops of fennel oil, twice daily, is often very effective in reducing and relieving paroxysms. This is another instance of return to an old remedy.

MYXEDEMA.*

Myxedema is dependent upon loss of function of the thyroid gland. Various morbid processes affecting this gland may be followed by this disease, but they usually destroy the function of the organ. The truth of this has been shown not only by post-mortem findings, but by the results of experimental extirpation of the thyroid gland in animals. It is interesting to note that total removal of the gland is regularly followed by myxedema, while if a small portion is allowed to remain the animal escapes the disease.

The interesting connection between myxedema and affections of the kidneys was pointed out at length in connection with the characteristic symptoms of the disease, which are an increase in the general bulk of the body, often mistaken for dropsical swelling and obesity; a bloating of the face, giving rise to a peculiar physiognomy; the features are bulky, the face broadened, and the lineaments practically obliterated; there is lack of expression, the lips are greatly thickened and the tongue swollen. The skin is dry, rough, and inelastic, while the hair is coarse and tends to be shed. Thought and speech are slow, and the tone of the voice is altered and the memory impaired. There are frequent headaches, and the condition sometimes merges into forms of insanity.

Fortunately, typical myxedema is a curable disease. In one of Dr. Anders' cases, after treatment by extract of thyroid for six weeks, all symptoms had disappeared, and the reduction of the weight was forty pounds. This method of treatment does not influence favorable cases of ordinary obesity. All cases must be carefully studied and selected before this powerful agent is to be administered. Important precautions must be taken during the administration of the remedy. The commencing dose must be small, since many individuals are remarkably susceptible to its action.

There can be no question but that the evidences of cardiac failure constitute a really serious, though fortunately not very frequent, result from the use of thyroid ex-

tract. Murray, who first used the remedy in the treatment of this disease, lost two of his early cases from cardiac failure, brought on by over-exertion. This observer strongly recommends rest in bed for a time after treatment has been instituted, with a view to avoid cardiac or arterial strain. This may be necessary in long-standing cases and in those in which cardiac or vascular degeneration are present. Ordinarily the administration of strychnin will be found to avert any dangerous degree of cardiac failure, and this should not be omitted from the treatment until a cure is effected. Only the gentlest exercise is permissible during the same period. There are certain phenomena to be watched for and to be regarded by the physician as adequate reasons for stopping the remedy.

It is well understood that after total disappearance of the myxedematous infiltration—that is, after all superfluous tissue has been removed—the treatment may have to be resorted to off and on, if not continuously. This is due to the fact that the thyroid gland is no longer functional, being, as a rule, atrophied.

In anomalous types of the disease, or such as do not seem to progress to the fully developed disease with its characteristic clinical picture, the face is rather flat, the skin somewhat swollen, dry, firm and inelastic. The features also lack mobility, but are not so coarse or bulky as in true myxedema. The physiognomy is uninteresting and phlegmatic. There is some tendency to corpulence, and the lips, nose and tongue are swollen. Thought is somewhat slow and the memory lags. Among mental phenomena are irritability of temper and an unnatural degree of suspiciousness. Such patients are often apathetic or even melancholic, and, if constipation or gastric disturbances be present, a supposed chronic dyspepsia is liable to be mistaken for this complaint. There is also danger of confounding this disease with neurasthenia. Finally, while the extract of thyroid has specific virtues in the treatment of myxedema, ordinary obesity usually demands other modes of treatment, according to its etiology.

* Dr. JAMES M. ANDERS, before the American Medical Association, June 2, 1897.

FIFTY YEARS IN SURGERY.*

If the teachers of fifty years ago were to revisit the scenes of their early labors they would scarcely recognize the medical colleges in which in their day and generation, and with the meagre appliances then at their command, they did what we must still recognize as yeoman's work in education. Apparently at that time the entire instruction consisted in lectures, no textbook being even advised. In reply to a letter addressed to the deans of the Jefferson Medical College, the University of Pennsylvania, Harvard University and the Medical Department of Columbia University, I am told that no lists of textbooks whatever appear on the catalogues of fifty years ago. Now we may congratulate ourselves that the majority of the medical schools of the country have a graded course of four years, each covering not less than six and often eight months, not only lectures, but in many instances constant and searching recitations; almost a score of laboratories in which each student actually does the work of observation and experiment; ward classes in which every man is obliged to train his eyes, his ears, his fingers and his judgment in the examination of patients in every department of medicine; to ferret out the history of the cases brought before him, ascertain symptoms, seek for physical signs, reach a diagnosis, determine the treatment and often actually to prescribe and to assist at operations. Not only, however, is the advance marked in our medical schools, whose diploma now really means almost what it says, but all over the land there have been established, partly from philanthropic motives and partly for the purpose of medical teaching, an enormous number of hospitals, in which a very large proportion of the young men, after receiving their diplomas, spend a year or more in the actual practice of their profession under the eye of accomplished teachers.

It is impossible to describe the immense

benefit thus obtained by large numbers of nascent practitioners from such familiarity with all the phases of diseases which they will meet in their after lives. Not a few of them also, by being brought in contact with energetic, enthusiastic and wise teachers, receive their first stimulus, both literary and scientific—a stimulus which will influence their entire future course and is of far more value than any amount of mere scientific knowledge they may acquire.

Allied to medical teaching and the most important adjunct to medical literature is the establishment of extensive medical libraries. In this, as an American, I am proud of my own country. No foreign nation can point with equal pride to any such medical libraries as the last thirty years have developed in this country. Foremost, not only among American libraries, but in the world, is that of the Surgeon-general's office of the United States Army in Washington. Not only has it gathered thousands of medical books and the eleven hundred medical journals (the estimate of Dr. Fletcher) from all over the world, but the entire library is managed with a liberality which makes it the admiration and envy of foreigners. Its treasures are freely at the service of the entire profession of the country and the publication of its magnificent Index Catalogue has made the whole world debtors to America.

In addition to this, the library of the College of Physicians of Philadelphia, of the New York Academy of Medicine, and of the Boston Medical Library Association are only surpassed by those of the Faculties of Medicine in Paris, of the Royal College of Surgeons of London, and of the Military Medical Institute of St. Petersburg, while those of the Newberry Library in Chicago (thanks to our honored and liberal president), of the New York Hospital and of the Pennsylvania Hospital rank well with the best European libraries. With such literary opportunities, therefore, if we had equally good scientific laboratories, the possibilities of American medi-

*Address on Surgery, by WILLIAM W. KEEN, M.D., before the American Medical Association.

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cine and surgery would be almost unbounded.

Animal experimentation has had also a very large share in the development of modern surgery. The whole question of the introduction of animal ligatures was begun in America by Physick, who used buckskin, and his follower, Dorsey, who used kid, and cut both ends short; Harts-horne, who used parchment, and Bellenger and Eve, the tendon of the deer, and has been solved principally by experiment upon animals in order to determine accurately the behavior of such ligatures in the tissues. Only professional readers can appreciate what a boon to humanity this simple achievement has been. Modern cerebral surgery also owes its exactness and success almost wholly to cerebral localization and antisepsis, both of which were first studied by experiment upon animals, and later by the application of the knowledge so gained to man. Bacteriology would not now exist as a science, nor would accurate modern surgery and a large part of modern medicine be possible, had experiments upon animals been prohibited, as some zoophilist women who love dogs better than men and women, and even little children, desire.

The appendix, that meagre but the most troublesome ancestral vestige, which, with the bicycle, has been the faithful friend of the surgeon through the past few years of commercial depression, has been recognized with the past few years as the real origin of the so frequent abscesses in the right iliac fossa. Beginning with Willard Parker's paper in 1867 and Fitz's memorial paper in 1886, the treatment of appendicitis and even its much-abused name are distinctly of American origin and an immense credit to American surgery.

A hasty review, such as has been given of the improvements in surgery within the last fifty years does much more than show us the adroitness, audacity and success of the modern surgeon. It means a prolongation of life by operations which, while not without pain and suffering during recovery, have been robbed of all their primary terrors by anesthesia and most of their subsequent pain and suffering by antisepsis; it means that patients who, in 1847, were hopelessly consigned to the grave after weeks and months of suffering are

now, in the vast majority of cases, rescued from death; it means that families, formerly left to spend years of sorrow, of suffering, and, in many cases, of poverty, because the bread-winners were taken away, have now restored to them their loved ones in health and strength and usefulness; it means that the hecatombs of a Caesar, of an Alexander, a Napoleon, are offset by the beneficent labors of a Morton, a Warren, a Lister, who are and who for all time will be blessed by many a poor patient who never heard of them instead of being cursed as the destroyers of nations and of homes innumerable.

Two diametrically opposing tendencies are prominent in modern surgery: Radical interference with disease, so that there is scarcely now a single organ or portion of the body not within our reach; yet, on the other hand, a remarkably conservative tendency in cultivating remedial rather than radical surgery. Joints so diseased as to require amputation are now treated conservatively with the best results. Ovaries, a portion of which can be preserved, are kept in the abdomen; kidneys, once doomed to extirpation, are now partially removed, and bones so diseased that they then required amputation are now excised and the limb preserved. Experiments upon animals have recently given us wholly new views of infection and of the origin of many diseases, and also the little knowledge that we yet have as to either natural or acquired immunity and to a consequent orthotherapy.

It is, I believe, on these lines that our more immediate future triumphs will be achieved.

AN English court has recently decided that an American physician with a genuine diploma from a recognized medical school is at liberty to practice medicine in Great Britain, but must not assume any titles implying that he is a registered British practitioner.—*Med. Age.*

By a simple rule the length of the day and night, any time of the year, may be ascertained by simply doubling the time of the sun's rising, which will give the length of the night, and double the time of the setting will give the length of day.

SOME DEFECTS OF SPEECH, THEIR CAUSE AND TREATMENT.*

This boy, J. C., was born in Ireland eleven years ago, with a cleft running back through the lips, alveolar arch, hard palate and soft palate. The hare lip was beautifully closed by Dr. Hamilton, of Dublin, when the child was seven years old.

He always had great difficulty in swallowing, and his speech was entirely unintelligible. When he was nine years of age Dr. John B. Roberts, of this city, did a very successful operation for closing the palatal cleft. This made the boy comfortable in every way, but it did not improve his speech to any appreciable extent. Even had he been given a perfect palate and perfect lips his speech would still have been defective, because for nine years the other organs of speech had been trying to adapt themselves to very imperfect conditions, and in so doing had developed abnormally, and formed certain faulty habits of action.

The cleft palate operation, therefore, should be done as early in life as possible, before these habits of faulty speech are formed. Even then we do not get good speech, because under the most favorable circumstances and with the most skillful operation we do not get a palate of suitable dimensions and normal functional activity. Nature as a rule has failed to give us sufficient tissue here, and some of it must be sacrificed in our efforts to unite the parts, and the muscular control of the palate is always very deficient.

The velum palati—that portion of the palate which is so essential to good speech—is too short. There is not enough material to make a veil sufficient to close the palato-pharyngeal chink, and the result is that the sounding breath, which should be directed through the oral cavity in the articulation of many sounds, is allowed to pass up through the nasal cavities instead, and this deflection makes the utterance of certain consonant sounds quite impossible.

Training will not improve this condi-

tion very much unless, at the same time, we are able to increase the effectiveness of the soft palate and uvula. The palate is too short and tense. It is stretched across midway between the tongue and pharyngeal wall and held down by the palatoglossi muscles, which are also too short. In addition to this, the pillars of the palate are usually bound together by old tonsillar adhesions, which assist in preventing the normal action of the palate. The uvula is either absent altogether, or, as in this case, very deficient in size and useless so far as its natural functions are concerned.

The indications here have been to secure greater freedom in the movements of the palate, and for this purpose I have separated the adhesions between the pillars and divided some of the fibres of the palatoglossi muscles, and then by frequent stretching of the parts and massage with the finger placed in the mouth, in this way I have been able to give him a more useful palate and his speech is quite intelligible.

The next case is the only one of the kind so far as I know.

This young man is fifteen years of age—born in this city of American parentage and is next to the youngest of five children—the other four being strong and healthy, although two of them are said to have had some slight derangement of speech in childhood, from which they entirely recovered without special treatment. In infancy he was what is known as a blue baby, and he had occasional spasms and spells of what was called suspended breathing.

At the age of one year he had a severe attack of broncho-pneumonia, from which he recovered very slowly, and he was extremely delicate until the age of seven years, since which time he has been in fairly good health. His speech developed very slowly and imperfectly, and he was brought to my clinic about the first of the present year. He could talk as glibly as you please, but not a single word was at all intelligible.

He had been attending school regularly,

* G. HUDSON MAKUEN, M.D., before the American Medical Association.

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where he had easily kept abreast of his mates in his studies, and shown himself to be rather above the average in intelligence. This is very unusual. In fact, I know of no other case with such a history. Even though the brain be in perfect physical condition, and the defective speech be due entirely to imperfections in the peripheral organs, cerebral action is usually very much impaired.

Usually defective speech is a great hindrance to mental development, and this is especially true as the patient gradually merges into adult life. It is then that he begins to feel the need of effective speech, and unless he can exchange with his fellows the products of the mind, these products will soon cease to materialize. This boy has gotten along very well up to this point. He is almost ready for the High School, but I believe he had about reached his limit of normal mental development and the next few years would have witnessed a retrograde action.

Peripherally there were no structural irregularities in the organs except some bad incisor teeth and a slight enlargement of the faucial tonsils, with some adhesions between the pillars which I removed, although they could have but little bearing upon the trouble.

There was really nothing in his mental or physical condition to account for his defect, and, therefore, I think we must conclude that the cause probably began away back in intra-uterine life, and existed all through the formative speech period up until about the seventh year. Before birth the blood which should have gone to nourish the fetus passed off in frequent hemorrhages, and for several years after birth the child's own circulatory apparatus was entirely inadequate, and, as a result of this faulty circulation and anemic condition, all the mental and physical processes were greatly retarded, and speech, being the most complicated of these processes, suffered most and improved least with his improvement in general health. A careful study and analysis of the action of the peripheral organs during his attempts at speech revealed the fact that only the simplest movements and combinations of these organs were made.

Our task was not so much to develop

the speech centre, as to train the motor track and the various peripheral muscles and organs of speech into right action. The centre for word concepts was intact, as was the motor track supplying the muscles of the arm for writing, for he did his thinking in the words that he uses now, and he wrote a good hand and spelled very well.

We began with exercises to develop the various muscles of the lips, the tongue, and the palate. He could not even open his mouth properly, and it was some days before we could get a satisfactory view of his tongue and palate. In trying to open his mouth the orbicularis oris would close sphincter-like, and he could not relax it, and I am convinced that he never knew what it was to smile. Various exercises were given him to correct these faulty muscular actions, and he was carefully shown, day after day, how to make the elementary sounds of the language, where to place the tongue, how to shape the lips, etc., much after the manner that we teach deaf mutes to speak, and we have found that there are no sounds that he cannot master, and I may say that he has not mastered, although he needs further practice to acquire greater facility of speech.

Multum in Parvo.

A young lady of very extraordinary capacity lately addressed the following letter to her cousin: "We is all well; and mother's got the his Terrix; brother Tom has got the Hupin Kaugh; and sister Ann has got a babee; and I hope these few lines will find you the same. Rite sune. Your affectionate kuzzen."—*Tit-Bits.*

ACCORDING to Lange the poisons of scarlet fever and measles may attack a person at the same time, totally independent of each other, so that a patient while suffering from one may be infected with the other. The course of either disease will be in nowise influenced, changed or heightened, but both will pursue a parallel course.—*Southern Medical Record.*

Justice is the insurance which we have have on our lives and property; to which may be added, and obedience is the premium which we pay for it.—*William Penn.*

CURRENT LITERATURE CONDENSED.*

The Rush Monument Fund.¹

The committee has exhausted its resources, and appeals to the association to determine, at once and definitely, what further steps shall be taken. It is not to be believed that the association has been insincere in its approval of the project, or that it repudiates the endorsement it has annually given to it, without a dissenting voice, during the past thirteen years. That assumption would be unworthy the dignity and reputation of this, the great national representative body of the profession of medicine in the United States. Neither Marion Sims nor Samuel D. Gross, of whom statues have already been erected, that of the latter begun since our own and unveiled less than a month ago, had the claims of Rush to national recognition, and if their admirers, students and colleagues could commendably commemorate them, why should not the great body of the profession honor the memory of this illustrious medical hero of the Revolution?

Benjamin Rush was no ordinary man. He was not one among ten, nor one among a hundred, nor one among a thousand of the patriotic sons of America who sowed the seeds of liberty in this country. He was *the one*, par excellence; the illustrious, incomparable physician who, having made himself master of his craft by long study, devoted himself to its higher development, and became famous as its expounder; who, when his country required his services, with equal alacrity and whole-souled purpose gave them to her, and became famous as her defender; who, when the crisis was over and the new Republic became an established Government, resumed his professional work, and in a hundred ways and a hundred years in advance of his time sought to improve social and sanitary conditions, and became famous as a great reformer, philanthropist, sanitarian;

who, doing all this faithfully, performed the duties of his calling as a practitioner of medicine, and sought to minister to his suffering fellow-citizens at the hazard of his own life, which he at last offered up, a victim of the prevailing epidemic of typhus, and became famous for his heroic martyrdom.

But you know all this. Year after year you have listened to the recital of the incidents of his remarkable career. While it is enough in most men's lives to have one special class of individuals interested in their achievements, this man claims the homage of every lover of his country, because of his courage in maintaining its liberties at the hazard of his life—of medical military men especially, because he was the Surgeon General of the Revolutionary army and vigorously insisted upon the proper organization of the Medical Department.

What State Medical Societies Have Done.²

Legislative measures to secure higher medical education, usually styled "Laws Regulating the Practice of Medicine and Surgery," more accurately to be described as "Laws for the Protection of the People"—have taken root and have come to stay. National bodies have taken them up and are rapidly centralizing the work accomplished in a desultory, but partially effective way by the State societies. The "National Confederation of State Medical Examining and Licensing Boards" is the legitimate and natural outgrowth of the efforts of individual societies. Although as yet it is scarcely more than embryonic, its function is well defined, and it must become the leader in further efforts to secure appropriate and uniform laws regulating the practice of medicine, and State societies ought to earnestly co-operate with it in order that it may be strengthened and its usefulness increased. But the results

* Reported for THE REPORTER from the proceedings of the American Medical Association.

¹ DR. A. L. GHION, U. S. N. (retired), before the American Medical Association, June 1, 1897.

² GEORGE B. JOHNSTON, M.D., President of Virginia State Medical Society, before the American Medical Association.

obtained in another department of legislation are not less striking.

In most of the States in which State Boards of Health have been established these bodies have been brought into existence through the suggestion and instrumentality of the State medical societies. These Boards have been of inestimable value to the public in the way of promulgating the laws of hygiene, in the prevention of epidemics, the suppression of those already existing and the conduct of commerce in times of public fear.

The labors of the State Boards of Medical Examiners and Licensers, and the State and other Boards of Health are made manifest:

By the improvement in the material from which medical men are formed. By the better preliminary education of medical students.

By the higher technical education of doctors.

By the binding together of the best medical colleges in a league, the sole object of which is to elevate the standard of medical education.

By the enactment of laws which admit only properly equipped men to enter the practice of medicine.

By the rapid disappearance of the pretender and the ignorant quack.

By the presence in every village or hamlet of a medical man whose character and attainments entitle him to rank with the best of his community; whose professional acumen and honesty fit him to discharge the duties of his high calling with confidence, skill and success, and whose trained faculties constitute him the guardian of the public health.

Medical Progress.³

The progress in medicine in the last fifty years has been such as to revolutionize its principles and practice. Empiricism has largely given way to rationalism, and physiologic and pathologic investigation has led to rational therapeutics. A great impetus has thus been given to pharmacy, and the experimental and physiologic laboratory has been the means of more accurate study into the physio-

logic action of drugs, and to-day we prescribe drugs with a degree of certainty as to their pathologic actions little dreamed of by our earlier brethren in medicine.

The commercial conditions into which pharmacists have been forced by a combination of manufacturing chemists and doctors has led to the evil of substituting on the part of the drug merchant and a feeling of distrust on the part of the physician, who in turn incurs the enmity of the druggist by dispensing his own drugs by the aid of the manufacturing chemist, who kindly furnishes him at wholesale his favorite remedies put up in suitable vials already labeled for use. The ire of the druggist finds vent in counter-prescribing the very secret compounds which his former friend, the doctor, compelled him to have on the shelves. The progress of pharmaceutic activity in this one direction has a tendency to alienate the two professions, which are really dependent upon each other, and which should work in harmony for the benefit of mankind.

While it is true that the enthusiasm and energy along the lines of etiology and pathology is what has brought medicine out of the depths of empiricism into the broad light of rationalism, it is necessary to bring back to its old estate the unpopular branch of therapeutics. For, after all, after we have learned to diagnose, detail the symptoms, talk learnedly of the etiology, the all-absorbing question to the patient is "What are you going to do for me?"

The remarkable result achieved in the treatment of diphtheria by the use of antitoxin has demonstrated that there is a legitimate field for investigation and discovery in this direction. The days of terror from the streptococcus seem to be numbered, as that serum is being perfected so that we have every reason to believe that in a short time erysipelas and kindred other diseases will no longer resist treatment as they have in the past.

Toxins have been used but little, except experimentally upon lower animals; but the time is at hand when they will be brought to their full share of usefulness. The human system may be made immune by the judicious use of toxins, the antitoxins being generated within the organ-

³ DR. WARREN B. HILL, of Milwaukee, before the American Medical Association.

ism, instead of being introduced from without, having been produced first in some other form of animal life.

Still, the question now arises, "What is it that makes the serum antitoxic?" Cannot we go further and from the serum isolate an active principle as we did from Peruvian bark? Shall we extend our chemical research into the realms of the animal organism and find the antidote for the poisons generated within the human system?

These seem to me to be the vital questions of the day, and if we work with the same zeal that our collaborators have in their investigations we will have a new *materia medica*, a new pharmacy, a new therapeutics, that will attract the attention of not only the medical profession, but of all humanity. For it is here that disease will be robbed of its terrors. It is here that the acme of medical knowledge will be attained—the curing of disease.

Prognosis and Therapeutic Indications in Heart Disease.⁴

The prognostic factors in diseases of the heart may be conveniently divided into three parts, the condition of the cardiac valves; the condition of the capillary and venous circulation; the condition of the muscles of the heart and of the muscular coat of the arteries. Obstruction of the mitral valve is serious in two ways; if due to stenosis, narrowing of the orifice from fibroid contraction, it throws great strain upon the left auricle, causing serious obstruction to the pulmonary circulation. In all mitral diseases a careful study of the right heart is of utmost importance. Before evidences of pulmonary engorgement show, an accentuation of the second heart sound gives the first signal that the left auricular wall is yielding to the strain. Next come evidences of pulmonary congestion and edema; then the right heart shows the strain, a careful study of which reveals an increase in size. In such conditions there is heard in the tricuspid region a soft systolic murmur, which is of very serious prognostic import.

No patient with aortic disease, even

though only slight obstruction, should be allowed to do anything to weaken or strain his left ventricular wall. Valvular lesions are serious to the extent to which their existence brings about degenerative changes in the cardiac muscles. If ever a pulsating liver is found it is generally indicative of tricuspid regurgitation, and is of serious import. Failure of appetite, accumulation of gas in the stomach and bowels and nausea are of bad prognostic import.

In a given case of disease of the heart the prognosis depends upon the condition of the muscles of the heart and of the arteries, and whether or not they are capable of being so improved as to compensate for whatever may have led to the present condition of failing circulation. If this be true it is evident that the therapeutic indication is to institute such measures as will tend to improve the muscle strength of the heart and arteries and restore the normal circulation and prevent accumulation in the veins.

Roentgen Rays in Ophthalmic Surgery.⁵

In the case reported by Clark before the American Ophthalmic Society, June, 1896, detailing an operation which owed its success to the Roentgen ray, the metal, the presence of which had hitherto been extremely uncertain, was discovered to be behind the iris near the corneo-scleral angle. It was extracted by the Hirschberg magnet, and the patient recovered almost the full activity of vision.

After repeated experiments, according to the methods of Clark and Williams, Dr. Stern succeeded—by the simple device of bandaging the sensitive plate to the temple on the side of the wounded eye, allowing the patient to sit upright and suspending the tube in front of and to the opposite side at an angle of 45 degrees and 14 inches distant—in obtaining pictures that showed beyond question the existence of foreign bodies within the ball.

It was found in cases of opacity of the media, such as leucomatosus cornea, capsular and lenticular cataract, that no improvement whatever could be noted, either in the disease or in the ability of the

⁴ D. L. ROCHESTER, M.D., Buffalo, N. Y., before the American Medical Association.

⁵ HOWARD F. HANSELL, M.D., before the American Medical Association.

patients to see clearer through the fluoroscope than without it. In a case of nearly absolute central scotoma, due to a large patch of central retino-choroiditis, repeated exposure to the rays as they were emitted from the tube gave the same negative result. The findings in cases of atrophy of the optic nerve were equally discouraging. From these trials it was concluded that, as a means of treatment of diseased conditions causing blindness, the rays were of no value.

Bock's suggestion that if persons blind from loss of transparency of the media might be able to read letters painted on a cardboard that were varnished and dusted with powdered metal, if they were subjected to the action of the X rays, is impracticable unless a fluoroscope or some other impossible calcium tungstate screen, by which the shadows were rendered visible, be placed behind the opaque cornea or lens.

Localization of Foreign Bodies Within the Eye by Means of Roentgen Rays.⁶

The first attempt to determine the approximate location of foreign bodies in the eye by means of metal indicators placed without the ball, was made by Dr. H. Lewkowitch, and reported in the *Lancet* for August 15, 1896. In these experiments, which were made upon sheep's eyes and the doctor's own eyes, the indicator consisted of a piece of wire placed in front of the eye, one of the arms of the apparatus pointing to the centre of the cornea. Only the anterior portion of the eyeball was included in the radiograph, the eye being rotated inwards and outwards to include a large part of the globe. The determination of the foreign body was then made by a triangulation of two shadows on the plate cast by the foreign body, by moving the tube a known distance from the first position in making the second exposure.

In the first experiment which I made upon the human subject, the photographic plate was inserted in the inner canthus, and photographic films were used, as being more readily cut to the shape desired. The rounded extremities were adjusted to

the inner and outer canthus, and to the eyeball at the centre of the upper lid. Two exposures were made; one with the tube on a line with the inner and outer indicators, and the other below the horizontal plane of the indicators. In determining the position of the foreign body in the eye, the apparatus was attached to a fixed support, and a lighted candle employed to cast the shadows of the indicators on a card-board, similarly to those made on negative by the X-rays. A small object was held in a position identical with the foreign body. The candle was moved until the shadows of the indicators corresponded to those on the second negative. The crossing of the two lines of shadows cast by the test object represented the situation of the foreign body.

Work of the Section on Pediatrics.⁷

It was at the meeting in New York in 1880, that the section on Diseases of Children became independent, and the sixth child of the mother body. The second meeting was in Richmond, Va. At the fourth meeting, held in Chicago in 1883, the first paper on diphtheria was read before it. At the 1884 meeting, one of the most important papers was by Dr. L. W. Atlee, Philadelphia, upon "Feeding of School Children." In 1886 the first paper by a woman member was read by Dr. Mary H. Thompson, Chicago, upon the "Study of the Diseases of Children."

At the 1888 meeting was read the paper by Dr. W. B. Atkinson, Philadelphia, upon the "Infant Food Problem," the beginning of the discussion of this subject. In 1893 "Diphtheria" was the leading topic. At this meeting was inaugurated the discussion of the paper.

In 1894 the program was greatly extended, and pneumonia and bronchitis were the leading subjects. In 1895 typhoid fever was given first place. Antitoxin in diphtheria was first mentioned, and "Tuberculosis, and the Relation to it of the Milk Supply," was first discussed.

The wisdom of establishing the section was borne out by the increasing importance of the topics considered by it. No

⁶ DR. WILLIAM F. SWEET, of Philadelphia, before the American Medical Association.

⁷ J. A. LARRADEE, M.D., of Louisville, Ky., before the American Medical Association.

advance made in medicine has been greater than that in the study of the diseases of childhood. The close attention of men has brought to light new facts and revealed new diseases.

When the Academy of Medicine was organized a half century ago, there was a scarcity of pediatric literature, but now the conclusion to be arrived at from the flood of literature marking the present, is that every new thing is not true, and every true thing is not new.

All innovations on established practice should receive a careful scrutiny, and credit should not redound so much to the one who conceived the idea as to those who, working upon the faith of their convictions, have with patience and persistency demonstrated it to the world's acceptance.

The study of bacteriology established a new era in medicine, but the new field is so fascinating that there is danger of neglect of seminology; clinical medicine must go hand-in-hand with laboratory work. The prominence given to preventive medicine and hygiene marks the progress of the profession.

Tuberculosis and other diseases named are tenable grounds for restricting matrimony and obtaining divorce. In higher moral education based upon the study of medicine lies the remedy. The breeding of cattle and hogs are the subjects of state legislation, but for the upbuilding and saving of the human race there is nothing.

Curability of Pulmonary Tuberculosis.⁸

Evidence has been accumulating which shows that tuberculosis is not only a universal, but the universal disease. Post-mortem examinations made in recent years point to the probability that 25 per cent. is much too low an estimate of the total number of infections. Schlenker made 100 consecutive post-mortem examinations of children and adults for this purpose, and found 66 per cent. tuberculous. Turning to pulmonary tuberculosis, Babes found lesions of the bronchial gland in more than one-half of his post-mortems on children. Long before Koch discovered the tubercle bacillus Louis laid down the

rule that if tuberculosis was found in any part of the body it would be found in the lungs.

It will be a moderate estimate to say that nearly 50 per cent. of the human race are infected at some period of life with tuberculosis. Large as is the death-rate, the tubercle bacillus does not seem to be a markedly virulent germ. Without the addition of septic germs pulmonary tuberculosis would not be the fatal disease it is to-day. The vile habit which American people have of expectorating on floors and sidewalks has much to do with the transmission of septic germs, as well as tubercle bacilli, to the lungs.

Nature can wall up tubercle bacilli with bodies of leucocytes and connective tissue cells for life, but cannot imprison septic germs for any great length of time. Tuberculosis uncomplicated with sepsis may be considered a curable disease, in the sense that it may be held in abeyance—that is, kept in a latent condition, for a lifetime, providing the vital resistance of the individual is kept up to the normal standard. Nature has been known to completely eradicate it in a limited number of cases. The scientific physician will endeavor to imitate nature so far as he can interpret her methods.

Can tuberculosis be cured to all intents in its latent stage? It has been demonstrated that two-thirds of all infectious diseases either disappear or remain quiescent during an average life. If nature can accomplish so much under the reign of empirical medicine, what will she be able to do when the physician concentrates all his energy on building up and maintaining the vital resistance of cell life, and keeping septic germs away from the latent life? The author has nothing to offer on the curability of the ulcerative stage—that is to say, the well-developed mixed infection. Perhaps less than 3 per cent. throw off both infections and fully recover. In probably 20 per cent. the disease becomes quiescent, and remains so for a number of years, and is then lighted up again. The average life of the remaining 77 per cent. may be placed at two years. The posting and enforcing the placard, "Gentlemen will not, others who do not class themselves under the title must not, expector-

⁸ E. B. BORLAND, M. D., of Pittsburg, before the American Medical Association.

ate on floors and sidewalks," would do more to improve the prognosis of either stage of pulmonary tuberculosis than all the toxin or antitoxin treatment of the last decade.

Treatment of Hernia in Children.*

Of 26,337 cases more than one-fourth were of children under seven years of age. Lack of treatment of simple cases during infancy is cause of the many severe cases in adults.

Directly the rupture is discovered, the truss should be applied. He said he has yet to see the infant that could not wear a properly-arranged steel spring truss. This, for umbilical rupture, should be worn for two or three years, and not left off in less than a year after the hernia has disappeared. Femoral rupture is rare in children, and practically incurable by truss. The only remedy is an operation. Of the 26,337 cases mentioned, 15,000 were over 21 years of age, and of these 1360 developed in childhood, and 700 before the age of puberty. The paper further referred to methods of treatment, the difficulties attending a lack of intelligent home care, and a review of cases having unusual features, a preference of methods and of material for sutures.

The Function of the Hair in Man.

Exner has published, in a recent number of the *Wiener Klinische Wochenschrift* (*Boston Med. and Surg. Jour.*) an article on this interesting subject. He states at the outset that the disposition of the hair on the different parts of the body always serves a definite object. The study of the descent of man and of embryology has shown that our ancestors were entirely covered with hair, as are the anthropoid apes. According to Darwin the gradual disappearance of the hair is due to the repulsion felt by women for hairy men, and their liking for the opposite; that is, to sexual selection. In the same manner he explains the exaggerated development of the hairy scalp in women, and of the beard in men, for in women the long hair and in men the beard have always been considered as attributes of beauty.

As to the physiologic functions of hairs, it is admitted that they are modified sense organs, which have lost all connection with the nerves. It is probable that in primitive man the distribution of the hair upon the body was irregular, and that the length, color, structure and thickness of the hair varied with functions for which it was intended. The hair which has been left upon the body in the process of evolution, has been left there for a definite purpose. Certain hairs serve as organs of touch, notably the eyelashes, the bulbs of which are surrounded by a network of nerve fibers, and in a less degree the hairs of the eyebrows. Both these serve to protect the eyes; for being sensitive they give warning of danger, so that reflex closure of the lids is produced. The eyebrows also prevent drops of sweat from running into the eyes, while the eyelashes keep out dust. The eyebrows and lashes also serve a purpose in sexual selection. The down which covers the body is also endowed with tactile sense; the hair in the region of the genitals and anus being the least sensitive. A thick growth of hair is also found in those parts of the body where friction must take place between contiguous cutaneous surfaces as in the axillæ, groin, perineo-scrotal and perineo-vulvar regions. By experiment with pieces of skin covered with hair, Exner has shown that the hairy covering markedly diminishes the friction of the cutaneous surfaces.

In animals the hair serves to maintain and regulate the heat of the body, but in man the hair of the scalp alone serves this purpose. Hair is itself a poor conductor of heat, and retains air, also a poor conductor, in its interstices.

The fact that the forehead is not covered with hair Exner explains on the theory that in the contest between the natural tendency of the hair to protect the head against changes of temperature and the tendency of human nature towards beauty, the latter has prevailed more easily because the non-conducting properties of that portion of the skull are increased by the air containing frontal sinuses, and that that portion of the head is easily protected from the heat of the sun by inclining the head forward.

* DR. WILLIAM B. COLBY, of New York, before the American Medical Association.

1853-1897.

THE MEDICAL AND SURGICAL REPORTER

Issued Every Saturday.

Editorial and Publication Offices, 1026 Arch Street, Philadelphia, Pa.

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THE BUTLER PUBLISHING COMPANY, P. O. Box 843

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TERMS: - One year, three dollars in advance. Four months' trial, one dollar in advance. Subscriptions may begin at any date.

REMITTANCES should be made by Draft, Money Order or Registered Letter, payable to the order of the Butler Publishing Company.

CONTRIBUTIONS of value to the medical profession are invited from all sources. Original articles, contributed exclusively to the MEDICAL AND SURGICAL REPORTER, will be paid for, after publication (payments made quarterly), or reprints will be furnished. Orders for reprints must accompany MSS. To ensure the return of contributions not made use of, writers must enclose return postage.

THE MEDICAL AND SURGICAL REPORTER will not be responsible for the opinions of its contributors.

PHILADELPHIA, SATURDAY, JUNE 12, 1897.

EDITORIAL.

THEORETICAL BRANCHES IN MEDICAL COLLEGES.

Some time ago there came before a college Faculty the question whether a certain student should or should not graduate. Seldom does a more difficult case for decision arise. His work in practical branches had been so near the perfect mark as could well be attained; in some non-practical branches, particularly anatomy, he had, in spite of repeated warnings, persistently fallen below the lowest standard. It was argued on the one hand that he would make a skillful practitioner, and that he would seldom feel the need of the subjects to which he had refused his attention. On the other hand, it was considered that the graduation of a man who had virtually ignored the requirements of the course would amount to a declaration that students could treat anatomy, physiology, etc., as elective studies, and that the professors of these branches would be helpless in their attempt to enforce attendance or attention.

It was finally decided that if a man matriculated at a college, he was bound to

do faithful work in all branches considered necessary for graduation; that neither in the particular case, nor as a matter of precedent, was it wise to allow a student to choose what he would and what he would not study, and that the so-called non-practical branches were, indirectly, often of the most decidedly practical nature. Especially was it considered that no Faculty had the right to authorize a man to perform operations unless well grounded in anatomy.

We wish to commend the example of this Faculty to others who may be placed in the same dilemma. Professional men are nowhere so scarce that it is necessary to strain a point in order to increase their numbers. We must bear in mind, also, that the profession differs from a trade only in that the former is supposed to include a knowledge of subjects having even an indirect relation to professional practice, whereas the trade requires only the knowledge of facts and methods which are pecuniarily valuable. Thus, any relaxation of the standards of a professional

school which allows the student to take a mere bread-and-butter view of his studies, is in the nature of a confession that the profession differs from a trade only in the sense that snobs can appreciate, that its practitioners are artisans and its students apprentices.

But, entirely aside from any such broad consideration of the case, the classification of studies into practical and non-practical is entirely erroneous. The usefulness of anatomy to the surgeon is universally granted. Perhaps, indeed, too much credit is given to the formal knowledge of textbook anatomy and too little to manual dexterity, and that kind of anatomic familiarity which is learned as one learns the streets of his own city. But anatomy is of much value also to the purely medical man. For instance, the differential diagnosis in cases of inflammation of the appendix, of ectopic pregnancy, of pyosalpinx, etc., even of urethral and biliary colic and of neoplastic growths, depends very largely on anatomic knowledge and the ability to diagnosticate correctly, and to decide when to call and when not to call an operator, is a large part of the usefulness of the medical practitioner.

The diagnosis of many affections of nerves, the differentiation, for instance, between a neuritis and an inflammation or rheumatic affection of a tendon, depends on a remembrance of the course of nerves. Visceral anatomy, however much emphasized in the case of the brain and spinal cord, is still neglected so far as the thoracic and abdominal contents are concerned, and the spectacle is not infrequent of a doctor trying to determine the nature and extent of a gastric dilatation, of a cardiac hypertrophy, of a hepatic sclerosis, of a pancreatic tumor or a swelling of the gall bladder, when he cannot tell the exact normal areas of the various organs named. Given a hazy knowledge of a normal

organ, and we have an imperfect conception of its diseased state and a vacillating therapeutics.

Physiology bears the same relation to perverted function that anatomy does to displacement or change of size and shape. Diabetes has been commonly misunderstood because the function of sugar in the body and its fate in various organs has not been known. Renal function has been imperfectly learned, and we find a profession either ignoring the value of analysis of the urine or limiting its examination to a few points which are totally inadequate and omitting tests which might give the very light needed on many a case. Chemical digestion has been superficially learned and half forgotten, and we find a profession bowing to the dictum of every manufacturer who has a pepsin or other ferment to sell and mistreating case after case, because the rudiments of physiology are unknown.

Chemistry is the basis of much of practical therapeutics and of most of toxicology, yet we find instance after instance of incompatibility in the former and of failure to produce precipitation of poison in the latter. Bacteriology has too recently recorded diagnostic triumphs to require a champion, but we are, perhaps, too apt to forget that pathology is the study of what really ails our patients and that pharmacology is the knowledge of just what our medicines will do for them.

We need a practical application of certain branches of college study, but we do not need to have these branches cast into disrepute in order to make room for studies which have been called practical because they are the more direct and more superficial application of their precursors in the curriculum. We need an increasingly thorough education of our students and a realization of the necessity of giving attention to the whole medical course.

ABSTRACTS.**COCAIN—ITS USE AND ABUSE.***

Cocain is usually employed in solution, and this should always be fresh. Solutions that are kept for several days gradually decompose, a flocculent deposit forms, and the strength of the cocaine is weakened. It is easy to observe the difference in anesthetic effect between two equally strong solutions of cocaine, one of which is fresh, and the other one or two weeks old. It does not seem practicable to preserve the solution in good condition by the addition of boracic acid or any other antiseptic.

The strength of the solution should be governed by the nature of the case in which it is to be used. If the solution is to be injected hypodermatically, or is to be applied to an extensive area of absorbent surface, as in the nose or throat, the solution should be two to three per cent, because under such conditions the opportunities for the absorption of the cocaine into the general circulation are the best, and if strong solutions are employed toxic symptoms will most probably develop. Likewise when applied to parts in which the circulation cannot be controlled.

When the cocaine is to be applied to only a limited area of an absorbent surface, as for the removal of a spur of the nasal septum, or the application of the cautery to a turbinated body, the solution should be 5 to 10 per cent. Also when used on parts where the circulation, by use of the tourniquet, can be controlled, the solution may be strong. Under such conditions the gradual loosening of the tourniquet after the operation will enable the hemorrhage to wash the cocaine out of the tissues, and as but little of the drug enters the general circulation, toxic symptoms rarely result.

Mucous, ulcerated and denuded surfaces absorb cocaine, but the healthy skin does not. When mucous or sub-mucous tissues are to be anesthetized the solution is applied directly to the membrane, and is readily absorbed. The same may be said

of ulcerated, raw or abraded surfaces. An exception in the case of mucous membranes is found when they are violently inflamed. One cannot successfully anesthetize a conjunctiva, the seat of an acute purulent inflammation. Under such conditions the cocaine seems either not to be absorbed, or if absorbed, is too rapidly removed by the increased circulation to produce its local effect.

Cocaine is absorbed with especial freedom by wounds where there is no present hemorrhage to wash the drug away. A very small amount of cocaine applied to such wounds is often followed by grave toxic symptoms. If the skin or sub-cutaneous tissues are to be cocainized the solution should be injected hypodermatically, or galvanism may be used to drive the solution through the skin. If the sponge or cotton attached to the positive pole of a galvanic battery be moistened with a solution of cocaine and applied to the skin, anesthesia of the parts results in from five to fifteen minutes, depending on the strength of the solution and of the galvanic current.

The length of time necessary for the production of cocaine anesthesia varies. When applied to a mucous surface, as the nose, the full effect is obtained in from five to ten minutes. When galvanism is used to drive the cocaine through the skin, ten to fifteen minutes are necessary. But when injected into the tissues, anesthesia is developed within one minute. The degree of anesthesia varies with the strength of the solution and the duration of the application.

Cocaine produces anesthesia only when it mingles in solution with the interstitial fluids of the part; and then the anesthesia is the result of the peculiar action of the cocaine upon the nerve-fibers, and cannot be further explained. The anesthesia will last practically so long as the cocaine is kept confined in the tissues. Cocaine is removed from the tissues by the blood; and is either thrown off externally, as

* T. HILLIARD WOOD, M. D., in *Journal of Practical Medicine*.

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with the blood in hemorrhage, or returns with the blood to mingle with the general circulation.

In operating on vascular parts the hemorrhage, unless controlled, washes out the cocaine and sensibility speedily returns. It is, therefore, important to complete the operation as speedily as possible; and the more so since anesthesia cannot be re-established by applying more cocaine to a bleeding surface from which it is constantly washed.

Following cocaine anesthesia the return of sensibility is often marked by a stinging, aching sensation in the part, which may, in fact, last for hours and cause decided suffering. I have often noticed that this after-pain is in proportion to the amount of cocaine used. For its alleviation we should not commit the error of applying more cocaine, for this would only prolong and increase the trouble.

Toxic symptoms produced by cocaine symptoms are more dependent upon the susceptibility of the individual than upon the amount of the cocaine used, or the method of its employment. Nor are these susceptible persons confined to frail or debilitated classes. On the contrary, one as often meets with cocaine poisoning in strong, robust men as among others. Some patients are so sensitive to cocaine that the application of a few drops of a weak solution to any absorbent surface is rapidly followed by the gravest symptoms. Recently I applied to the everted eyelid of a robust young man a few drops of a cocaine solution for the incision of a chalazion, and had a marked case of poisoning within three minutes. Such cases might be multiplied.

Now is it possible by any known means to judge of the susceptibility of a patient until the cocaine has been used. For this reason the first use of cocaine in an individual should be guarded until we are sure there is no idiosyncrasy present.

The toxic symptoms are a marked loquacity, a feeling of weakness, tingling sensation in the extremities, general nervousness, blanching of the skin, cold perspiration, rapid feeble pulse, superficial respiration, vomiting, dilated pupils, cyanosis, unconsciousness and convulsions. Ordinarily the lighter cases rapidly recover, and leave no bad results, but the

graver ones may increase and end in death by arrest of respiration.

These symptoms are best combated by laying the patient down, giving whisky, either by the mouth or hypodermically; hypodermatic strychnin or atropin, and artificial respiration.

Last, but not least, is the cocaine habit. In many people the effect of cocaine is so pleasant, the stimulating effect, both physical and mental, is so agreeable, and the relief from certain local conditions following its use is so gratifying that the patient insists on its continued use. And when, after a time, the physician declines to employ it further, the patient goes, without his physician's knowledge, to the drug-store and obtains and uses it himself. Thus is not unfrequently established the cocaine habit.

Those who are given to the alcoholic or opium habit seem predisposed to the cocaine habit, and in such patients cocaine should be used sparingly. As an additional precaution against this habit the patient, when practicable, should be kept in ignorance as to the drug employed, so he cannot get and use it of his own accord.

The Heart of Livingstone.

Mr. Poulett Weatherley, who has for some years been traveling in Central Africa, recently visited the tree under which Doctor Livingstone's heart is buried at Old Chitambo. He remarks: "It is a thousand pities that some attempt has not been made by people at home, who are interested in Livingstone and his work in Africa, to prevent the exact spot where he died from being hopelessly lost sight of, as it will be in a very few years. When the poor old Mpundu tree falls through fire and decay—it is now fast becoming a mere shell—after having kept guard so faithfully all these years—a quarter of a century now—there is nothing to replace it. Nothing could possibly be more appropriate than the simple rugged tree standing over the spot; no monument could be more inexpressibly solemn; but, unfortunately, it cannot last forever. The Mpundu must go, and with it, unless prompt steps are taken, goes the knowledge of the site of Livingstone's last halting place."—*Nature.*

SALINE STARVATION.*

There are many forms of degeneration, and, while the causes of most are obscure, some are evidently due to faulty foods. One form of degeneration seems due to saline starvation. Physiologists talk too much of the nitrogen and carbon of food, of which few escape getting enough if they can get food at all. But of the other half dozen elements, equally essential to life, and some more essential to health, we have heard but little since Liebig died. Yet some of these are the very elements which many who try to be well fed are starved in. Some are exceedingly soluble, and thus easily lost by careless or foolish cookery; and others reside most in or near the skin or husk, which a false taste excludes from our tables. It is an old and cruel experiment of the French academicians, who fed dogs on washed flesh meat until they died of starvation. The animals soon became aware that it was not food, and refused to eat it.

Analyses of the liver and other vital organs after death show that in some diseased states these organs contain only one-half of certain saline matters that are invariable in the healthy organ. And in proportion to this deficiency, the organ is useless for its work. Not only the liver, but the kidneys, spleen and brain, and the small blood vessels in every part of the body share in this degeneration. Strangely enough (and not unlike the French experiment), this amyloid, waxy, or lardaceous tissue is indigestible by the gastric juice. It is "washed flesh" made inside of the body. The essential salines that can be readily washed out of food are chiefly potash salts and alkaline phosphates. These are the two that are found deficient, about 50 per cent. in the waxy form of degenerated tissue. This is the type most common in atrophied children, and in persons suffering from consumption and other wasting diseases; but it is not uncommon in the capillaries, and small arteries of many who seem in health.

When vegetables are soaked in cold

water to keep them fresh, when they are blanched in hot water to please our eye, or when they are well boiled and the essence drained off that we may eat the depleted residue, those soluble salines are almost entirely extracted. And what are left? Chiefly the less soluble salts of lime and magnesia—just those elements so abundant in the cretaceous degeneration of blood vessels. Potash is the alkaline element of formed tissue; its absence is one great cause of scurvy, as well as of the waxy and perhaps the cretaceous types of degeneration. Bread was, I suppose, at one time the "staff of life," but it could hardly have been white bread. Of it one pound contains about seven grains of potash, or nearly twenty grains less than a pound of brown bread. Potatoes, if peeled, steeped, and boiled in plenty of water, contain only about twenty-one grains to the pound, as against thirty-seven if boiled in their skins. The skins surpass the center about four-fold in salines. Cabbages and all leafy vegetables lose much more, as the water goes through every portion of them. Arrowroot, cornflour, and most of those prepared foods are more deceitful than the washed flesh of the French academicians. Stewed fruits, as made by some cooks, are also guilty of the wash. Even porridge, haricot beans, peas, etc., are by some cooks soaked when raw, and thus much depleted.

There are some foods especially abundant in potash salines. It may be well to know these and how to use them.

GRAINS PER POUND.

	Potash	Phosphoric Acid.
Bran	93.1.....	201.6
Beans	80.5.....	55.3
Flaxseed	72.8.....	91.0
Peas.....	68.6.....	61.6
Rye Flour.....	45.5.....	59.5
Cabbage heads.....	42.0.....	14.0
Barley Flour.....	40.6.....	66.5
Potato.....	39.2.....	12.6
Beets.....	30.1.....	5.6
Oatmeal.....	29.4.....	38.5
Carrots.....	22.4.....	7.7
Turnips.....	21.0.....	7.7

* C. D. HUNTER, M.D., F.C.S., in the *Vegetarian*.
Condensed from *Public Opinion*.

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The above are all rich in potash, but other things, containing less, may yet supply more by the larger quantity one may eat, and by the absence of or by the mode of cooking avoiding any risk or loss. The fruits best to use for this purpose are, in order of richness, strawberries, greengages, plums, pears, and oranges; and of vegetables, rhubarb, celery, lettuce, endive,

watercress, and dandelion. Vegetables of all kinds should be cooked in soups only, for the water gets the quality of the vegetable, though the solid part may retain the quantity. Dyspeptics who say they cannot eat vegetables will find the strained soup of them quite light, easily made pleasant, and of more value to them by far than the boiled vegetable itself.

PERISCOPE.

NEWS AND MISCELLANY.

Liability of a Physician Making Examination for Third Party.—Where a physician undertakes to examine a person, and to report whether he is diseased, the Supreme Judicial Court of Massachusetts holds, in *Harriott vs. Plimpton*, October 21, that he is bound to have the ordinary skill and learning of a physician, and to exercise ordinary diligence and care. If he fails, and the person examined is injured because of his want of such skill and learning, or his want of such care, he is answerable in damages. The fact that the purpose of such examination is information and not medical treatment is, in the opinion of the court, immaterial. But the breaking of the marriage engagement of the person examined, in consequence of a wrong diagnosis, the court considers too remote a damage to sustain an action. Whether the physician has used ordinary care, learning and diligence is, upon the evidence, for the jury to determine. When the physician's subsequent conversations with third parties on the subject of the examined person's condition are had under circumstances which justify him in communicating the information, the court further holds that the absence of express malice is a defense to an action for slander.—*Journal A. M. A.*

Alcoholic Fermentation produced by the Fluids of the Living Cells.—By crushing yeast cells and compressing the crushed cells with pressure of 400 to 500 atmospheres, E. Buchner has obtained a clear yellow fluid containing over 10 per cent. of solid particles, largely albumin. After filtration, which eliminates every vestige of the living cells, the fluid displays the extremely important property of producing alcoholic fermentation, namely, converting glucose into alcohol and carbonic anhydrid. "These results are the complete refutation of the hitherto accepted ideas that fermentation is only associated with the presence of the living cells, and opens new paths for biologic and bacteriologic investigations, by which path-

ology, and possibly also therapeutics may benefit." Buchner claims priority over Koch in this mechanical crushing process, which is the basis of Koch's new tuberculin. His description of the process was published last January. He also states that he offered to patent it for the firm now manufacturing the tuberculin, who refused after long deliberation.—*Journal A. M. A.*

The results of the Elsner method of diagnosis in typhoid fever were given by Dr. Mark W. Richardson, of Boston, before the recent meeting of the American Medical Association as follows:

First. The isolation of typhoid bacilli from the dejections of persons sick with typhoid fever is, in the great majority of cases, a practicable procedure.

Second. With the appearance of convalescence the organisms disappear rapidly from the stools. This is important as regards disinfection.

Third. The value of the serum test is greater by reason of its simplicity and its earlier appearance. In those cases where the specific blood changes necessary for the serum reactions do not appear till late in the disease, till convalescence begins, the bacteriological examination of the stools should be of greater value.

A case of appendicitis in an infant is thus reported in the *Boston Med. and Surg. Journal* by F. W. Taylor, M.D.: C. T. L., male, one year and three days old, well developed and unusually well nourished, vomited in the night of February 22, 1897, without known cause. Vomiting was soon followed by loud, prolonged crying, which was repeated whenever the patient was moved. Vomiting, frequent retching, and crying continued throughout the sickness. Nothing was retained by the stomach. The vomitus consisted of mucus, with water or milk if either had been swallowed. Dejections of normal feces occurred February 24 and 25 spontaneously, and on the 26th with intestinal douche. The temperature

ranged from 100° to 102° F. The pulse was very rapid. The color was always good. Repeated palpation failed to discover tumor, or to locate pain or tenderness. Distention of the abdomen was slight February 25. On the 26th it became extreme, but no flatus was passed. In the afternoon the vomitus became brown. At 9 P.M. the abdomen was opened in the median line, and the peritoneal cavity found to contain a large amount of thin pus. An incision was at once made over the appendix ceci. The appendix was swollen, red, and attached to the neighboring intestines by adhesions of lymph. It was removed. It had been perforated on the side opposite the mesentery, at about one-third of its length from the tip. The abdomen was flushed with boiled water, and free drainage provided. Death occurred February 27 at 1 A.M.

Dr. William Osler, of Baltimore, in discussing relapses in typhoid fever, before the American Medical Association, gave the results of his experience in 500 cases under his care during the past seven years. Of these, forty cases had relapse, eight per cent. The number varies greatly in different epidemics, and in the statistics of observers from three to fifteen or twenty per cent. A relapse is a reinfection from bacilli retained in certain regions. The immunity in typhoid fever is slowly induced, and the germs remain active in the spleen, the lymph glands and especially in the gall bladder for a long time. The exact causes of relapse are unknown. Errors in diet may be followed in a few cases, but in a majority the conditions are at present beyond our knowledge.

Typhoid fever treated antiseptically was discussed before the section of the Practice of Medicine of the A. M. A. by Dr. H. O. West, of Galveston, Texas. He asserted that no infectious disease had probably been the subject of more careful research than typhoid fever. There is no drug or combination of drugs which have so far received general recognition as having the power of effecting a specific cure. He was skeptical as to the abortive powers of any drug in the treatment of typhoid fever, for a number of reasons.

First. Because it was a specific, infectious disease, and, with the exception of malaria, there was no other of this class which can be regulated by the action of drug.

Second. The long period of incubation gives ample time for the infectious micro-organism to pass beyond the intestine into other tissues and organs, where they cannot be reached via the gastro-intestinal canal.

Third. There is no evidence to prove the potency of any medicine for the destruction of the pathogenic agent in the intestinal canal when given in doses which would not be toxic to the infected person.

Fourth. There is no drug known to him that can be introduced through the circulation by which can be destroyed the typhoid bacilli after they have reached the glandular organs.

At the recent meeting of the American Medical Association in this city, Dr. McCormick, of Williamsport, briefly related his experience in treating typhoid fever. Since September 1, 1893, he had treated 124 cases of typhoid. Twenty-one recovered of 24 treated the first year. Between September 1, 1893, and March 1, 1894, he had but one fatality in 100 cases. Dr. McCormick followed the text-books in his treatment of the first 24 cases; baths were used, the diet was carefully regulated and sulpho-carbolate of zinc was given. After all this he found that he was losing one patient out of every eight. He then abandoned all the old plans of treatment, and entered upon an entirely new one, with the result that in thirty months he had lost but one patient out of a hundred treated. The treatment advocated by Dr. McCormick for typhoid fever, summed up, was as follows: Keep the bowels open, keep the alimentary canal aseptic as possible, give good nourishing food, give plenty of water, use the best intestinal antiseptic known; never give opium, never give phenacetin or acetanilid; give strichnia as indicated.

Recently, in Hampstead, England, an electric light lineman stepped into a transformer-pit, and received a fatal shock. The result led to a rigid inquiry by the authorities, with voluminous reports by experts and medical men, and the investigation threatens to result in preventive legislation. The *Electrical Journal*, of Chicago, says that in that city "a two-line notice, with the usual funeral announcement" would have "settled the matter." Fortunately matters are different on the other side of the Atlantic, and the Briton refuses to sacrifice humanity to human progress.

The necessity of overcoming the insomnia attending certain cases of pneumonia ought to be evident to every physician, says the *Vermont Medical Monthly*. Probably nothing known to the profession can alleviate the distressing symptom of sleeplessness so satisfactorily, and with so few after effects, as bromidia. By the use of this reliable preparation the effects of losing sleep can be obviated without danger of the heart's action being impaired, a dire calamity in a pneumonic process.

At the last meeting of the Berlin Medical Society Dr. Albu spoke on the dangers of bicycle racing. He said he had examined twelve bicycle racers on the ground at Halensee, near Berlin, both before and after races lasting from five to thirty minutes. In each case he found symptoms of acute dilatation of the heart after the race; the pulse was enormously accelerated, the lips and face were more or less cyanotic, and there was considerable albuminuria. The dilatation of the heart, in some cases, lasted several hours, and Dr. Albu thinks that repeated training and participation in races might transform it into chronic

dilatation. Of course, he added that these dangerous symptoms only accompany excessive exertions on the bicycle, whereas moderate bicycle exercise was universally recognized as healthy. In the debate that followed, Professor Virchow drew special attention to the position or "seat" of the bicyclist. He said there was no doubt that the prone position must affect the abdominal organs.—*Canadian Practitioner.*

Properly conducted exercise is important in the treatment of pulmonary tuberculosis, according to Dr. Rochester, of the University of Buffalo, before the recent meeting of the American Medical Association in this city.

Without exercise and fresh air all efforts come to naught, regardless of whatever specific medication is used. The treatment of special symptoms was thus advised:

Cough—Generally best relieved by attention to the upper air passages, keeping them free from secretion. The constant inhalation of essence of peppermint through a perforated zinc mask was especially valuable.

Pain in the chest was best relieved by strapping the chest or by hypodermatic injection of morphin.

Fever—Best controlled by the nuclein administration; sponging with alcohol and water is often of great value.

Sweating—This generally disappears during the treatment with nuclein. Atropin and aromatic sulphuric acid still remain at the head of the list of drugs useful in controlling this distressing symptom.

Fissured Nipples.—As a prophylactic measure Lepage recommends that the nipples should be regularly washed with a solution of mercuric iodid (two to four grains) in spirits of wine (twelve drachms), glycerin and distilled water (each one pint). If, after using this for a few days, the ulceration disappears a solution of boric acid may be substituted. Joise has observed that cocaine, when applied to cracked nipples, has the power of diminishing the milk secretion, and from this fact he was led to the use of this agent when he desired to complete suppression of milk. He applies a five-percent solution in equal parts of glycerin and water five or six times daily; suppression of the milk is observed in from two to six days. By producing anesthesia of the nipple, cocaine prevents its erection, and thus favors the decrease in the quantity of milk.—*The Practitioner.*

Passive Motion After Fractures.—While nearly all text-books are united in recommending passive motion after fractures near or involving joints, the idea is steadily growing that such practice is bad, tending to increase inflammation, keep up irritation, and lead to excess of callus. Senn says: "I am firmly convinced that it is desirable practice to postpone passive motion until the intermediate

callus is firm enough to prevent motion at the seat of the fracture. Postpone passive motion from eight to twenty-one days, in the child; in the adult, from three to four weeks. It is by securing rest for the fracture that we diminish, as far as possible, the amount of exuberant callus so often in the way of an ideal functional result."—*Louisville Medical Journal.*

Dentistry a Very Ancient Profession.

—Dr. Geist-Jacobi, of Frankfort, Germany, has written a history of dentistry, from 3700 B. C. to the present time. According to this, it is known that there were men practicing the profession of dentistry in Egypt at least 5,000 years ago.—*Journal A. M. A.*

The Hungarian government permits women to study medicine if they so desire, but one of the professors of the University of Budapest has recently proclaimed that he has something to say in the matter. Of the five women now studying medicine there, one has a remarkably fine head of hair, which the professor of surgery says must come off before she can be permitted to attend his clinics. The reason that he gives for his prohibition is that "wool carries infection."—*Medical Review.*

Dr. Floyd Young reports the following unusual case of precocious parturition from Chilhowie, Virginia. A young white girl, aged 10 years and 2 months, daughter of respectable parents, gave birth to a fully matured child, weighing three pounds. The parents seemed to know nothing of the condition of the little woman, and on the night of her confinement they thought she was suffering with colic, hence sent for no physician, and knew no better until they heard the cry of the child. The girl was developed in every respect, having menstruated regularly since she was two years old. The baby was not allowed to nurse, and only lived a few weeks.—*Bulletin of the Virginia Health Board.*

Symphiotomy.—Dr. Edward Ayres, of New York, describes three recognized methods of performing symphiotomy,—Morisani's, Pinard's, and his own, as follows:

"Morisani's method of cutting down to the upper border of the pubis, then passing a curved Galbiati knife down behind the joint and cutting from the base up and out, is not popular in this country, and should not be, being both anatomically and surgically objectionable. Pinard's operation, which consists in cutting down upon the face of the symphysis through the soft tissues and exposing the joint, is a great improvement over Morisani's; the chief objection to it lies in the cutting through the vessels of the clitoris, causing much hemorrhage, and in unnecessarily exposing the joint.

"Dr. Ayres has operated five times in the last eighteen months by a new method which

he described in a paper before the Obstetric Section of the Academy of Medicine in January.

"The following are the essential points in the operation:

"1. Secure full dilatation of the cervix, if possible, without risk to the child, before cutting the symphysis.

"2. Make the initial incision a little above the subpubic arch and under the elevated clitoris.

"3. Have the urethra and bladder held to one side with a small male sound.

"4. Introduce the left index finger within the vagina against the posterior ridge of the joint up to the top.

"5. Pass a narrow tenotomy knife, with the point close to the joint, up to within a half-inch of the top, and under the overlying soft tissues, cutting the middle portion of the joint.

"6. Substitute a probe-pointed bistoury, and meet the left index finger with the probe over the top of the joint, and work the blade through the joint downward until separation is felt by the posterior finger.

"7. Have an assistant press the mouth of the wound and the tissues lying over the joint with a small piece of gauze.

"8. Deliver with the forceps, if possible, and refrain from suprapubic pressure, aiming to deliver the head through the cervix without drawing it down below the symphysis.

"9. Hold the bladder well to one side while pressing the pubic bones together.

"10. Pass a small strip of gauze into the prepubic wound and another against the cervix after irrigating, leaving both pieces exposed for easy removal, having refrained from stitching cervix or perineum.

"11. Dress the vulva with gauze, and strap the joint with adhesive strips.

"12. Remove all the gauze in thirty-six hours, and irrigate the vulva and vagina twice a day, keeping the vulva carefully dressed between times.

"13. Attend to catheterization in person."—*Moderne Medicine.*

Widal's Test for Typhoid.—Block (*Johns Hopkins Hosp. Bul.*, November-December, 1896) gives the record of typhoid cases subjected to the agglutination reaction in Osler's clinic. Of twenty cases tested with a dilution of 16 to 1, and the time limited to half an hour, the reaction was complete or marked in eleven, the earliest reaction being on the twentieth and the latest on the 106th day. In six cases, all of moderate severity, the reaction was partial, and in the remaining three it is described as slight. Clumping of typhoid bacilli was also obtained with serum from cases of diabetes and malaria. Agglutination was obtained, not only with serum, but also with milk, urine, pus, blister fluid, tears, and probably stools, not with edema fluid, aqueous humor, saliva, gastric juice, and bile. The agglutinative reaction has also been demonstrated in cholera, pyocyanan infections, tetanus, pneumococcus infections, diphtheria, etc., each one with its own specific serum.

In one case of typhoid the blood taken at the necropsy yielded only a partial reaction. Typhoid cultures from three sources were used in the experiments, the cases reacting much more markedly with one of them than with the other two, this being probably a test of virulence. Block has also tried the dried-serum method as adopted by Wyatt Johnston, of Montreal. He finds it less constant in its results than the former method. Of seventeen of Osler's cases the dried blood reaction was marked in nine, six being severe and three slight cases. In three, two severe, one moderate, the reaction was partial; in two mild cases, one on the third, the other on the seventeenth day, it was doubtful. In three cases, one mild, one severe, it was slight; the third at the beginning of a relapse of moderate severity showed no agglutination, but nine days later it was slight.—*British Medical Journal.*

Tuberculosis of the salivary glands is one of the rarest affections (M. O'Zouë *Archives Cliniques*). Valude states that it is almost unknown, but easily produced experimentally by inoculation with tuberculosis cultures. He made ninety inoculations in the salivary glands of rabbits with pure cultures of different degrees of activity, sixty-eight of which gave positive, and twenty-two negative results. M. Valude attributed to the mixed saliva, which was formed of the three principal salivas, such chemical properties that Koch's bacillus could not thrive or even live in it. He acknowledged, however, that the value of this theory was entirely hypothetical, and he preferred to consider the antagonism of the micro-organisms of the mouth as a cause of the death of Koch's bacilli; so that all local inoculation became very difficult, and the buccal mucous membrane and the salivary glands were spared. Conheim, on the contrary, hesitated to express himself so positively, and questioned whether all the so-called scrofulas of the lips, the mouth, and the throat, and the caseification of the ganglia of the neck were not due to an immediate application of the tuberculosis virus in the food. At all events, it has been shown that a number of cases of intestinal, mesenteric, and peritoneal tuberculosis, especially in children, have been due to tainted food, and particularly to tuberculous milk. The author says in regard to the action of the mixed salivas, that it may be asked why this saliva—which, after all, does not differ greatly from the three separate salivas—exercises such an energetic influence on Koch's elements, when each one of its parts has no action at all on the elements, as has certainly been proved by Valude's experiments. The author gives an account of two cases of what seems to him to be very distinct tuberculosis of the submaxillary glands. From a clinical point of view, he thinks they are absolutely indisputable, and he thinks that the results show that tuberculosis of the salivary glands, which may be produced experimentally, exists also clinically.—*New York Medical Journal.*